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Original Article

Physical activity and psychosomatic status in patients with Behçet's disease during coronavirus disease pandemic

Songül Bağlan Yentür[1], Furkan Bilek[1], Süleyman Serdar Koca[2]

Abstract

Objective: The aim of this study is to examine the changes in physical activity level, fatigue, depression, and sleep quality in patients with Behçet's disease during the COVID-19 pandemic.

Methods: The study was designed as an online questionnaire applied to individuals who are being followed up with the diagnosis of Behçet's disease in the rheumatology department. Data were collected using multiple scales including International Physical Activity Questionnaire (IPAQ), Fatigue Severity Scale (FSS), Beck Depression Inventory (BDI), Pittsburg Sleep Quality Index (PSQI), and Visual Analogue Scale (VAS) to evaluate physical activity level, fatigue, depression, sleep quality, and pain, respectively.

Results: Sixteen patients diagnosed with Behçet's disease were included in the study. No statistically significant difference was observed between the IPAQ, FSS, BDI, PSQI, and VAS assessment scores before COVID-19 and during COVID-19 period ($P > .05$ for all).

Conclusion: Thinking of the negative effects of aggressive clinical symptoms, Behçet's disease patients should be supported in physical activity and psychosocial status.

Keywords: COVID-19, pandemic, Behçet's disease, physical activity, depression, fatigue

Introduction

Behçet's disease (BD) is chronic, autoimmune, and rheumatic disease that characterized with major organ involvement such as eyes, musculoskeletal system, gastrointestinal system, and central nervous system.[1] Gender and clinical findings affect the prognosis of the disease. Papulopustular lesions, eyes involvement, and vascular lesions are seen more aggressive in male patients, while genital ulcers and erythema nodosum are frequently seen in female patients.[2] All these symptoms cause poor quality of life by impairing both physical function and psychosocial health.[3] Fatigue, depression and anxiety were found to be worse than healthy population in patients with BD.[4] Bodur et al[3] concluded that quality of life and life satisfaction were affected negatively in patients suffering from BD according to normal population.

Coronovirus disease-2019 (COVID-19) is an infectious disease that causes the common cold to more serious condition which is severe acute respiratory syndrome (SARS-CoV).[5] The disease first appeared in Wuhan, China, and soon affected the whole world; especially in Europe and United States of America.[6] The first case in Turkey appeared on 10 March 2020[6] and World Health Organization declared COVID-19 as pandemic on 11 March 2020.[7] COVID-19 has similar symptoms with seasonal flu, but it is more infectious than flu virus and has at least twice more than flu at death rate.[8] People suffering from chronic diseases like rheumatologic diseases are at more risk because of rapid and uncontrolled spread of the epidemic.[9] Measures have been taken in many countries to prevent the spread of the epidemic. Social distancing is one of the foremost measures. Curfew and staying at home were applied in many countries within the scope of social distancing.[10] It was recommended not to go out except in compulsory cases and to keep a distance of one and a half meters from other people in Turkey. However, the process of staying at home brought along physical inactivity for all of the society.[11]

Physical inactivity is a general health problem and a risk factor for coronary heart disease, type II diabetes mellitus, hypertension, and obesity.[12] Physical activity level is concluded to decrease in studies with rheumatic diseases. Some common symptoms such as periodic pain, chronic fatigue, depression, and decreased aerobic capacity leads to physical inactivity in patients with rheumatoid arthritis (RA), ankylosing

ORCID iDs of the authors:
S.B.Y. 0000-0001-9394-4817;
F.B. 0000-0003-1567-7201;
S.S.K. 0000-0003-4995-430X.

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[1] Department of Physiotherapy and Rehabilitation, Fırat University Faculty of Health Sciences, Elazığ, Turkey
[2] Division of Rheumatology, Fırat University School of Medicine, Elazığ, Turkey

Address for correspondence:
Songül Bağlan Yentür; Department of Physiotherapy and Rehabilitation, Fırat University Faculty of Health Sciences, Elazığ, Turkey
E-mail: songulbaglan23@hotmail.com

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spondylitis (AS), systemic sclerosis (SS), and systemic lupus erythematosus (SLE). On the other hand, physical inactivity may cause impairment of psychosomatic health.[13-15]

Decreased physical activity level and changed exercise type have been reported in university students because of compulsory staying at home within the process of pandemic.[11] Benefits and importance of exercise are known in the situation of sickness and health. Decreased physical activity level and sleep quality as well as increased fatigue and depression level have been reported in patients with rheumatic diseases even in normal situations.[16,17] Therefore, the aim of this study is to investigate the change of physical activity level, fatigue, pain, depression, and sleep quality in patients with BD during the pandemic.

Methods

The study was carried out in accordance with the Helsinki Declaration. Informed consent forms were obtained from the patients who participated in the study at the beginning of the study. Twenty-one patients who were followed up with the diagnosis of BD in the Department of Rheumatology at Fırat University were included in the study. Ethics committee approval was received for this study from the Non-Interventional Research Ethics Committee of Fırat University (Approval Date: 2020; Approval Number: 2020/15-16).

Data collection method

Participants were invited online in electronic form, as it was recommended to minimize face-to-face interaction with the public and isolate themselves at home. This study was an example of online survey application. Participants were not paid for answering the questionnaire. The questionnaires prepared, along with the voluntary consent forms, were sent to the participants via a link or a web-based data matrix. People who voluntarily accepted to participate in the study were enrolled in the study easily and safely with devices such as computers, phones and tablets. The online survey application used has provided some positive aspects such as easier access, faster distribution, and time savings due to reasons such as quarantine application during the epidemic, high risk of COVID-19 transmission in outdoor environments. The estimated completion time of the questionnaire was calculated as 16 minutes on average.

Participants

The study included 21 patients who were diagnosed with BD according to the criteria of the International Behçet's Disease Study Group, aged between 18 and 65. Patients with stabile disease activity and whose medical treatment has not changed in the last 3 months were enrolled. Pregnancy, malignancy, neurological, and musculoskeletal involvements those would restrict physical activity as well as mental dysfunctions leading to communication problems were exclusion criteria of the study.

Outcomes

Patients were asked about demographic information such as age, height, weight, occupation, smoking/alcohol habits, drugs used, duration of the disease, whether they have exercise habits, personal history, and family history. Physical activity levels, fatigue, depression, pain, and sleep quality of the patients were evaluated. The evaluations were applied during the period when no restrictions were applied before the epidemic was seen (February and March 2020) and were repeated during the period when social isolation measures were implemented in Turkey (May 2020).

Physical activity level

Physical activity level was evaluated using the International Physical Activity Questionnaire (IPAQ)—Short Form Turkish version. With this questionnaire, information about the time spent with walking, moderate, and vigorous activities in the last 7 days is obtained. In addition, there is a separate section on sitting in the questionnaire.[18]

Fatigue

Fatigue was assessed using the Fatigue Severity Scale-Turkish version (FSS). This scale consists of nine questions; each question is scored between 1 and 7. Higher the score presents more severe of fatigue.[19]

Depression

Depression was evaluated with the Beck Depression Inventory (BDI)—Turkish version. This scale consists of 21 items including many depressive symptoms such as feeling of failure, pessimism, guilt, dissatisfaction, sleep, anorexia, and fatigue. Each item is scored between 0 and 3. High score indicates high depression level. According to this scale, a score between 1 and 10 is normal, a score between 11 and 16 is mild mental distress, a score between 17 and 20 is the limit of clinical depression, a score between 21 and 30 is moderate depression, a score between 31 and 40 is severe depression, and a score >40 indicates severe depression level.[20]

Pain

Pain was evaluated using the Visual Analogue Scale (VAS). With this scale, the patient is asked to give a score between 0 and 10 to the pain intensity. An increase in the given score indicates an increase in pain intensity.[21]

Sleep quality

Sleep quality was evaluated using the Pittsburg Sleep Quality Index (PSQI)—Turkish version. The questionnaire is applied to obtain information on sleep quality and disorders in the last 1 month. It consists of 19 items. High score indicates poor sleep quality.[22]

Statistical analysis

Statistical analysis of the study was performed using the SPSS version 22.0 (IBM Corp., Armonk, NY, USA). Continuous variables will be given as mean ± standard deviation and categorical variables as numbers and percentages. Wilcoxon signed rank test was used to compare the values before and after the surveys. Differences below P value < .05 were considered significant.

Results

This study was included twenty-one patients and completed with sixteen participants (10 females, 6 males). Five participants were not reached and excluded from the study.

Two of the patients continued to regular jobs. The other patients did not go out except in compulsory circumstances. Descriptive and clinical features of the enrolled patients are presented in Table 1. All patients had history of oral ulcer. Eight patients described scar of genital ulcer. None of them had neurologic, enteric, vascular, and musculoskeletal involvements. One patient had history of uveitis. 15 patients were taking colchicine and one patient was taking colchicine + azathioprine. None of them were taking local and systemic corticosteroid.

No statistically difference was observed in physical activity level, pain, fatigue, depression, and

Main Points

- It is known that BD has negative effects on physical and mental health of patients and negative effects of COVID-19 pandemic are seen in population with and without chronic diseases.
- Curfew due to pandemic leads to decrease physical activity level and affects mental health. BD patients are susceptible to the negative effects of curfew.
- Promoting physical activity level and supporting patients psychologically can reduce the negative effects of the pandemic.

Table 1. Demographics and clinical characteristics of participants.

n = 16		*n*	%
Gender	Female	10	62.5
	Male	6	37.5
Working	Yes	6	62.5
	No	10	37.5
Smoking	Yes	5	31.3
	No	11	68.8
Alcohol use	Yes	1	6.3
	No	15	93.8
Regular exercise	Yes	1	6.3
	No	15	93.8
		Mean ± SD	Min-Max
Age		30.02 ± 7,01	19-43
BMI (kg/m^2)		26.19 ± 5.00	17.86-36.73
Disease duration (year)		7.69 ± 5.99	1-25

BMI, body mass index; SD, standard deviation; min, minimum; max, maximum.

sleep quality in before and during COVID-19 pandemic ($P > .05$). However, clinically impaired physical activity level, fatigue, and depression were found in this study (Table 2).

Discussion

This study was applied to examine the changes in the physical activity level, fatigue, depression, pain, and sleep quality due to the changes caused by the COVID-19 process in patients with BD. As a result of the study, there was no significant difference in these parameters in patients with before the COVID-19 pandemic and during the pandemic period.

During the COVID-19 pandemic process, staying at home and social distancing were the main measures taken within the scope of social isolation. This situation brought all individuals to necessarily change their lifestyle.[23] According to a study conducted on university students, it was concluded that the physical activity levels of the students decreased during the COVID-19 process and the type of physical activity performed greatly changed.[11] In our study, we concluded that there was a decrease, even if not significant, in the level of physical activity in patients with BD. Our inability to obtain a statistically significant difference may be due to the insufficient number of patients.

A review published in 2019 was reported that the risk of stroke by 16%, diabetes risk by 42%, and coronary heart disease risk by 24% increased associated with physical inactivity even before the COVID-19 pandemic.[24] The benefits of regular physical activity and exercise are well known in the literature. Besides the anti-inflammatory effect, regular exercise purposes to increase endurance, flexibility, muscle strength, and energy expenditure. In addition, exercise provides improvement in body composition and emotional status, increases in coping with stress, self-confidence, and well-being. Exercise is effective in dealing with anxiety and depression and reducing pain. It also provides a reduction in health expenses.[25] However, it has been found that although individuals with rheumatologic diseases know the importance of exercise, they were unwillingness to exercise.[13] The physical inactivity-related clinical symptoms are observed to reduce participation in treatment. These symptoms may be listed as pain, kinesiophobia, depression, fatigue, disease activity, and sleep quality. While these symptoms may cause physical inactivity, physical inactivity may also cause these symptoms to be aggressive. Therefore, the decrease in physical activity level of patients with rheumatic diseases may cause impaired quality of life.[17,26]

According to the results of our study, no significant difference was found in the assessments of pain, fatigue, depression, and sleep quality before the COVID-19 pandemic and during the pandemic process. However, it was found to increase fatigue and depression clinically. This situation may arise from the psychosocial and physical changes of social distancing during the pandemic process. Patients with BD increased fatigue, depressive symptoms, poor sleep quality, and quality of life symptoms similar with other rheumatic diseases.[4,27] These symptoms progress in a vicious cycle in some patients.[28,29] Physical and mental changes that may occur in patients during the COVID-19 pandemic process may have pushed patients into the vicious cycle.

This study had several important limitations. First, the study had a cross-sectional design and thus causal inferences may not be drawn from the data and analyses provided in the study. Second, the insufficient number of patients in our study may be the reason for not obtaining a statistically significant difference. Despite the above limitations, this study provides valuable information on BD regarding the ongoing COVID-19 pandemic period.

In conclusion, we examined the changes in physical activity, fatigue, pain, sleep quality, and depression in patients with BD and found no significant difference in evaluation parameters before and during COVID-19 pandemic. We think that different results may be obtained with higher number of patients. Since BD is a chronic inflammatory rheumatic disease, these patients have a higher risk of infection than the general population. Therefore, it is more important for these patients to protect themselves from the pandemic.[9] However, considering that patients do not prefer to go to the hospital in this process except in compulsory situations, the importance of preventive physiotherapy becomes clear. The social, physical, and psychological benefits of physical activity

Table 2. Comparison of evaluations in before and during COVID-19.

	Before COVID-19, Mean ± SD (Min-Max)	During COVID-19, Mean ± SD (Min-Max)	*P*
Pain	3.00 ± 3.12 (0-8)	2.56 ± 3.08 (0-8)	.550
IPAQ	2577.75 ± 2377.60 (396-9093)	2025.53 ± 2881.19 (66-9540)	.096
FSS	32.00 ± 17.05 (8-61)	34.88 ± 14.90 (9-60)	.605
BDI	9.69 ± 7.16 (0-25)	11.81 ± 7.63$^{1-25}$	.139
PSQI	5.88 ± 4.56 (0-16)	5.88 ± 4.21$^{1-17}$	.697

IPAQ, International Physical Activity Questionnaire; FSS, Fatigue Severity Scale; BDI, Beck Depression Inventory; PSQI, Pittsburgh Sleep Quality Index; min, minimum; max, maximum; SD, standard deviation.

are evident.[25] We anticipate that the exercise with the support of the physiotherapist during this period will reduce the symptoms and be of great importance for the safety of the patients. Therefore, we think that patients with BD should be encouraged in physical activity and exercise.

Ethics Committee Approval: Ethics committee approval was received for this study from the Non-Interventional Research Ethics Committee of Fırat University (Approval Date: 2020; Approval Number: 2020/15-16).

Informed Consent: Informed consent was obtained from the patients who participated in this study.

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